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# **The Economics of Services in a Changing Environment**

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## **Abstract**

This presentation concentrates on the management issues associated with providing library and information services in a changing environment.

The transition from print to digital media has been a success story in many countries. At the same time, libraries are under increasing pressure to justify their expenditure. An answer to the crucial question is needed: Does this expenditure in terms of costs and benefits justify the services delivered? Publishers have encouraged the new trend by offering resources in digital format at little or no additional cost to the print subscription, but how will it be the future. New pricing models are bound to appear. The cancellation of print subscriptions has started. Regional consortia have become a valuable tool for purchasing these resources.

However, the management of these resources and services cannot yet be considered straightforward and smooth although it is fairly easy to start. Better management information, especially on costs and new kinds of measures, is needed. User and usage statistics will be a major concern. A case study carried out at Tampere University of Technology illustrates that the costing structures for print and digital services differ considerably. The results of activity-based costing at Tampere University of Technology Library are reported briefly.

## **Introduction**

Traditionally every library generation talks about change and its tremendous speed, how it affects our lives in libraries, what can be done and what is going to happen next. We should not underestimate the real concern about the future because the management of the library must resolve the matter under the prevailing circumstances to the best of its ability.

The change in libraries is often associated with product and service development or the advent of new innovations. That was the case in the 1970's when full-scale user education emerged and when enthusiastic developers started to use online databases and searching. Economic aspects were not seen as important but use, usability and automation were the major concern. In the 1980's the implementation

of library systems was the object of the change. At that time many libraries were using their first or second library systems, therefore there was a lot of enthusiasm, and money could be obtained fairly easily by cancelling the subscriptions of seldom used journals. The management of the university was also favourable to library projects because libraries were the first in the university to automate their operations. The library was seen as a "shop window".

The third wave of enthusiasm occurred when the Internet and the World Wide Web appeared. Publishers got their digital content products ready for the market. Libraries needed to transform their operations to be suitable for networked delivery. Publishers have encouraged this trend by offering resources in digital format at little or no additional cost to the print subscription. Users favoured this format, and the transition from print to digital went on smoothly and well, in fact at accelerated speed. Usage has grown exponentially, the supply of e-journals has increased manifold. Figure 1. presents the growth of e-journals collection in relation to print journals at Tampere University of Technology Library (TUT).

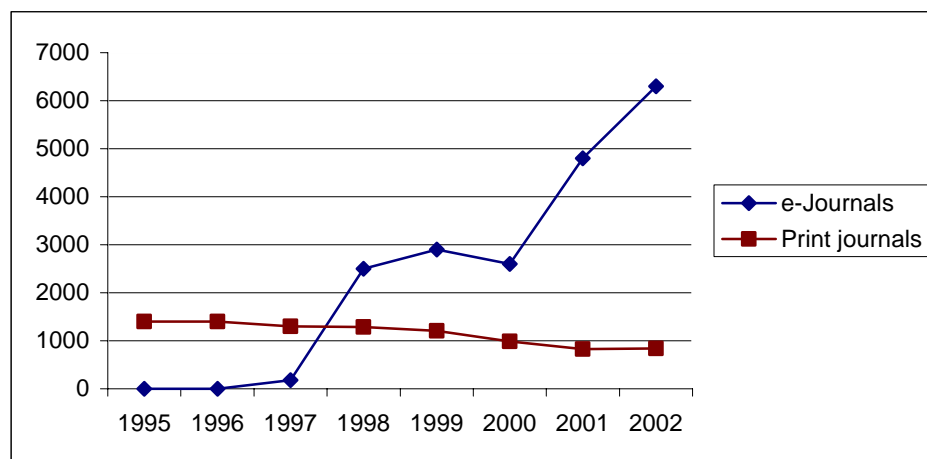


Figure 1. The growth of e-journals collection in relation to print journals at TUT Library.

As can be seen, the change is in new information technology but entails many factors, not least financial matters. In a recent Finnish study, weaknesses in academic libraries were the insufficient economics training, lack of public profile and lack of marketing skills [1].

### Trends in the academic environment

The transition from print to digital has been a success story in many countries as reported in IATUL conferences and elsewhere [2,3]. In Finland university libraries formed the first small-scale consortium in 1996, and since then a major part of licences have been obtained through the Finnish Electronic Library FinELib, not forgetting that these first licenses were Nordic ones with our sister universities. At the same time, libraries are under increasing pressure to justify their expenditure due to the change in the academic environment. An answer to the crucial question is needed: In terms of costs and benefits does this expenditure justify the services delivered?

Trends in academic environment:

- The number of students and staff is growing
- The costs of libraries and IT services are increasing more rapidly than those of other goods and services
- Performance-based funding
- Emphasising the importance of quality and assessment
- Virtual university and extensive use of ICT
- Libraries are becoming a more integral part of the educational process
- The convergence of libraries and IT services.

Libraries have traditionally offered their services free of charge. New services based on expensive licence fees make it economically difficult for libraries to serve with limited and shrinking resources when we learn that price increases exceed the annual increase of library budgets. Libraries at the moment use differing portions on their budgets to e-resources: Helsinki University of Technology 15% of total budget, Tampere University of Technology 21% and Lappeenranta University of Technology 9% as the figure among all university libraries is 9% [4].

## **The Library at Tampere University of Technology**

Tampere University of Technology is the second largest university of Technology in Finland. It was founded as a branch of Helsinki University of Technology, and it got its independence in 1972. It has grown rapidly up till about 12 000 students. In 1996 some IT activities, especially front desk services, were turned over to the Library.

The Library in figures

- Expenditure about 3M Euro
- Staff 25 FTE
- About 7000 e-journals, about 1100 e-books
- About 140 000 books and 750 journals
- 380 PC's for users in the Library and in 10 computer labs

To get a better picture of what we are doing and what that might cost we decided to improve our cost management procedures. We have, of course, over the years followed the guidelines and orders of the University Financial Office but this was not enough. Especially during the recession period in the 1990's it was imperative to find out the real costs, and how money in the Library was distributed among various services. The first modest attempts were made in 1996 when it was necessary to cut budgets. Later in 1997 activity-based costing was introduced at the University, and the Library took an active role trying to get maximum benefit from it.

## **The Deep economic recession in the 1990's**

As mentioned earlier, the recession struck especially hard in the 1990's in Finland. Everybody had to take part in the recovery: in the higher education, too.

Measures taken in the 1990's

- New methods for budgeting
- Savings in staff
- Savings in information resources
- Savings in space

New budgeting methods included, apart from the official governmental accounting, more innovative informal budgeting and accounting methods. We created "shadow budgeting" in which all the money and other resources were allocated to services in more detailed ways. Regular follow-up of cost information was also introduced. In 1996 a downsizing strategy was completed, and we were on track in 1997. It was helpful that the staff understood the situation and took part in the joint effort.

Downsizing staff was a painful operation; civil servants were laidoff, and voluntary vacation was recommended. The lack of workforce was evident, and actions were needed. Opening hours were cut back one hour in the evening; no significant effect on the number of clients was observed.

Savings in information resources were a major effort. In the 1980's withdrawals of serial titles had already been started, but in 1995 some 35% of titles were cancelled. We were happy to have good and usable information on both routing and browsing use of serials over the years. In fact we had carried out usage studies regularly every third or fourth year.

Savings in space was easy. The student union needed new premises, and the Library had just enough space to give up. However, the decision was difficult because we did not have the faintest clue how rapidly the transition from print to electronic could occur. The decision was easier to make because we were promised that the savings could be used for e-resources.

Lessons to be learned:

- Better cost accounting should be developed
- Quality aspects should also be considered
- Reliable and more useful statistics should be available
- Relevant surveys and studies should be carried out.

## **The transition from print services to e-services at TUT**

The major shift from print to electronic was at the turn of the millennium. Before that a number of evaluations and studies had been carried out in strategically important areas in the 1990's. These included:

- Compass benchmarking of IT services which produced a number of proposals for improvement as well as a useful set of numerical data on library activities. As a result we reviewed our acquisition process for PC's, outsourced student printing, and revised quality and good practices standards for IT labs and helpdesks.
- In the CRE Review of 1998 it was suggested that a more appropriate level of resources for the Library should be allocated. Budgets had not risen after the recession favourably in our case [5].

- However, evaluations and studies do not produce money but more concrete steps should be taken because the growth of e-services seemed to be evident. A systematic look at our processes and cost structure was absolutely essential. It was decided to carry out a comprehensive activity-based costing study.

Library and IT services are grouped in five value-added service areas:

- Learning environment, which includes library self-service and reading areas and IT labs
- e-Services
- Print services
- Specialist services
- Management and development.

It can be seen in Figure 2. that print services still dominates with 46% of total expenditure, learning environment takes up 20%, and e-services 23%. This grouping is very useful for our purposes because it is customer-oriented and considers new innovative services, like learning environment and e-services, to be important. In the annual negotiation with the University Rector results and quantitative targets are agreed. A new set of measures had to be created because official library statistics meet our demands poorly. However, it is updated almost every year because of the rapid change.

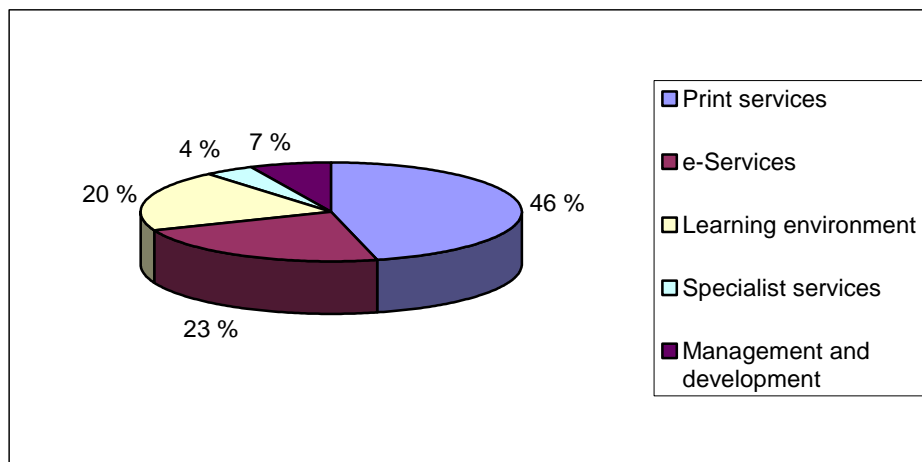


Figure 2. The costs of value-added services at TUT library in 2002.

Main resources: staff, information resources, space and IT were analysed for all value-added services. It is obvious that different cost structures can be found. In Figure 3. the distribution of main resources shows that staff costs and space costs are dominating in learning environment and print services, whereas staff costs are relatively low in e-services. It seems, however, that staff working with e-services have higher salaries, whereas print services are very labour-intensive.

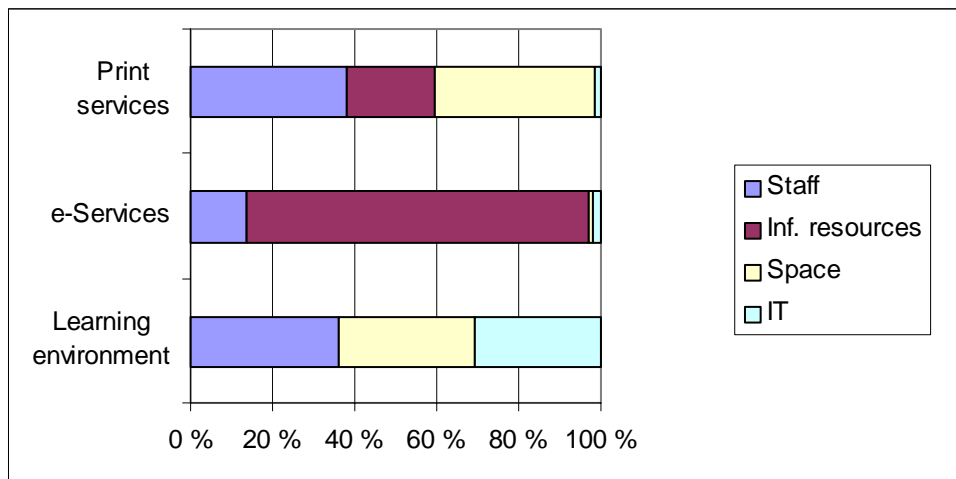


Figure 3. The distribution of main resources in learning environment, e-services and print services at TUT Library in 2002.

We have also looked at the fixed costs of library activities to get a better picture of our performance. Here I only show fixed costs for printed books, printed journals and e-journals. It can be seen in Figure 4. that internal services: selection, acquisition and registration of information resources, constitute the biggest cost factor, 20/80 seems to be valid.

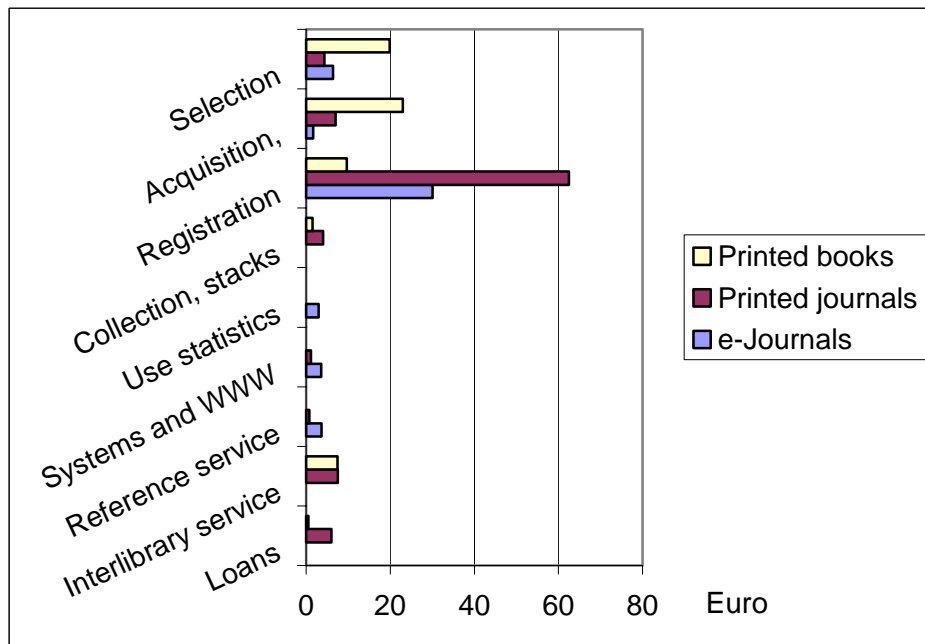


Figure 4. Fixed costs of library activities at TUT Library in 2002.

Some observations:

- It seems that there is a lot of overcapacity in print services: thus seldom used books could be sent to the National Repository Library.
- Overcapacity can be found in e-services, too. About 80% of e-journals are seldom used (used 0-2 times) mainly due to the "Big Deal" licensing agreements. What economic and business models will emerge for networked information and e-services? There should be different models of licensing available to meet the needs in libraries.
- It was laborious to get statistics on e-resources, and if they are available they appear very slowly. Gradually statistics from e-resources became available and meet better our needs.
- The results of cost accounting can be easily applied to pricing decisions. At TUT an internal cost recovery is used for some library services.
- Only a slight annual transition of resources from one service area to another is possible but at least our experience shows that it is possible.

**To conclude** my paper at this conference, I can say from experience that economic matters and cost accounting are a challenge for libraries and information services designing new services and improving old ones but the library can benefit from taking financial matters into account.

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